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Satellite Newsflash: The Americas

Telesat Canada Signs Launch Agreement with Arianespace

On April 10 1987, Eldon Thompson, President of Telesat Canada, and Frederic d'Allest, Chairman of Arianespace, signed an agreement in Ottawa concerning the launch in 1990 of Telesat Canada's next generation of communications satellites. The first Canadian satellites ever launched by Arianespace, both Anik E1 and E2 will be deployed from the Ariane Space Center near Kourou, French Guiana, on South America's northeastern coast. Ariane 44P launch vehicles capable of placing satellites directly into geostationary transfer orbits will be used to deploy both Anik E satellites, a move that should conserve enough satellite stationkeeping fuel to ensure operational lifetimes of at least ten years. Anik E1 will immediately enter service in 1990 while Anik E2 will be placed in a storage orbit until 1992. Both satellites have been designed to meet Telesat's communications requirements until at least the year 2000.

"Technical performance, price, and favorable terms and conditions were the main reasons Telesat chose Arianespace," said Thompson, President of Telesat Canada. Frederic d'Allest, Chairman of Arianespace added: "We are particularly proud to have been selected...as the outcome of a hard-fought competition...by Telesat, a leading world consultant in space telecommunications. We are honored by the confidence placed in us by one of the most experienced companies in the operation of communication satellites."

At the time of their deployment in 1990, the Anik E spacecraft will be the largest, heaviest and most powerful dual-band communications satellites ever built for a domestic satellite company. Spar Aerospace Ltd of Toronto, Ontario is currently building the satellites at its Ste-Anne-de-Bellevue plant near Montreal, Quebec, with RCA Astro-Electronics of Princeton, New Jersey supplying a number of the basic Anik E spacecraft components. The construction of the Anik E satellites is scheduled to be completed by 1989.

The satellites will be used to transmit television, radio, telephone and data communications for Telesat's broadcast and telecommunications customers throughout Canada and between Canada and the United States. Incorporating significant increases in power, channel flexibility and coverage area, each Anik E spacecraft will carry an equivalent capacity of 56 television channels, or approximately the combined capacity of one Anik C and one Anik D satellite. With their combined C/Ku-band communications payloads, the Anik E satellites will weigh about 2500 kg--double the weight of previous Telesat spacecraft.

The three-axis stabilized Anik E satellites will

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measure 24 meters from wing-tip to wing-tip. Three communications antennas for reception and retransmission of signals will be carried on board; one antenna for C-band voice, data and broadcast traffic throughout Canada and the U.S., and two Ku-band antennas for Canada/U.S. coverage. Unlike the Anik C spacecraft, which provided Ku-band coverage via 1/4- or 1/2-Canada spot beams, each of Anik E's Ku-band transponders will provide Canada-wide coverage and achieve a signal strength that is three and one-half times more powerful than its Ku-band predecessors.

Arianespace is the industrial and commercial company that is responsible for the production of the Ariane launch vehicles. Arianespace also markets and sells Ariane launch services, and handles the launches that take place from the Guiana Space Center in French Guiana. Arianespace Inc., a wholly-owned subsidiary of Arianespace, markets Ariane launch services in the United States. In April 1986, a liaison office was opened in Tokyo to serve Japan and the Pacific region. Arianespace has firm orders for 44 satellite launches valued at about U.S. $2.35 billion.

A private corporation with headquarters in Ottawa, Telesat provides nationwide telecommunications and broadcast distribution services to a growing number of corporate and government customers throughout Canada. Since the successful launch of Anik A1--the world's first domestic geostationary communications satellite--in 1972, Telesat Canada has owned and operated eight other telecommunications spacecraft, more satellites than any other privately-owned domestic satellite company in the world. As of mid-1987, Telesat had five Anik satellites in geostationary orbit. Anik C1, C2, C3, and Anik D2 were all deployed by NASA space shuttles, while the three Anik A birds as well as Anik B and Anik D1 were all launched by the U.S. Delta rockets.

Telesat Canada's net earnings rose from $10.7 million in 1985 to $13.6 million last year, according to the company's 1986 annual report released last month. Operating revenues totalled $105.3 million.

In his annual message to Telesat shareholders, company President Eldon Thompson noted that 1986 was "a watershed...the first full year during which Telesat acted as a *retailer* of voice, data and image telecommunications services." Mr. Thompson predicted continued large growth in this market, because of Telesat's ability to exploit niches where satellites naturally excel over other forms of communications. Prior to mid-1985, the company had been confined to wholesaling bulk satellite capacity for non-broadcast services to terrestrial carriers, such as large telephone companies, and relatively few satellite data services or networks.

Although Telesat's annual report was primarily upbeat, a couple of disappointments were noted. The Canadian Radio-television and Telecommunications Commission has begun a policy review that has blocked Telesat Canada's plans to implement a direct-to-home satellite TV service using existing Anik C Ku-band satellites. The quasi-DBS service was to have provided television to 1.2 million underserved households in remote areas of Canada. Unlike Cancom's existing 4-GHz service, which presently provides thousands of Canadian households with satellite TV by means of relatively large C-band earth stations, the proposed direct-to-home Ku-band service as envisioned by Telesat Canada would have used smaller and less-expensive Ku-band terminals. The failure of the U.S and Canada to agree on the allocation of radio frequencies for a common mobile satellite telecommunications service was also seen as a formidable obstacle to Telesat's plans to introduce its MSAT mobile satellite service in the early 1990s.

Telesat is presently expanding its facilities to meet the growing demands of the Canadian telecommunications marketplace. The company is about to begin construction of a new 188,000 square-foot corporate headquarters in the Ottawa suburb of Gloucester. A network of multi-user/multi-satellite teleport earth station facilities in major cities across Canada is also in the works. In May of 1986, Telesat began construction of the Teleport de Montreal, a multipurpose earth station and broadcast complex in the heart of Montreal's television and radio district. The new facility is slated to be completed later this summer and a new permanent teleport for Toronto is also under construction. According to Thompson, all of these moves reflect the firm's confidence in its role as an end-to-end telecommunications service provider in the years ahead.

To coincide with the building of its Canadian teleport network, Telesat Canada has also recently opened regional sales offices in Vancouver and Montreal to better serve the broadcast industry. Already in operation, the Vancouver office at 400 Burrard Street is now working with broadcasters and other carriers to meet their satellite communication needs for the 1988 Calgary Olympic Games. Due to open on July 1st, the Montreal office, will be located at Teleport de Montreal, at 1755 Dorchester Boulevard.

On April 1, 1987, three new members were elected

to Telesat Canada's 12-man board of Directors at the company's annual meeting. They are: Douglas C. Campbell, President, CN Communications, Toronto; James A. Coombs, President and CEO, Saskatchewan Telecommunications, Regina; and Leonce Montambault, President and DEO, Bell Canada, Montreal.

(For further information contact Mike Bryan, manager Corporate Communications, Telesat Canada (613) 746-5920 ext. 2282.)

Contel/Comsat Merger On the Rocks

In a letter to the Securities and Exchange Commission dated April 13 1987, Contel's Board of Directors concluded that recent decisions on the part of the Federal Communications Commission concerning the business activities of the Comsat Corporation have made it necessary for Contel to terminate a $2.47 billion merger agreement with Comsat which was reached on September 26, 1986. Under the Communications Act of 1934 and the Satellite Act, Comsat is subject to regulation by the FCC with respect to both the communications services provided through the Intelsat and Inmarsat systems and the rates charged for these services. The FCC Common Carrier Bureau recently directed Comsat to refund approximately $62 million in excess earnings by Comsat's jurisdictional businesses during the 1983-1986 time period or to show cause why such refunds should not be implemented. According to the FCC, Comsat earned more than the maximum-allowed 12.48% after-tax profit margin on its business activities during that period. Comsat was granted a period of 45 days to file a schedule of refunds or to show that refunds are not justified.

According to Comsat, the FCC refund order is just the latest example of the application of a Bureau theory--that it can recover so-called excess earnings from past periods--which is being challenged by virtually all of the domestic carriers in two cases already pending in the U.S. Court of Appeals for the D.C. Circuit. Believing that the FCC's refund order is unjustified and unwarranted both on the facts and the law, Comsat has indicated that they will vigorously challenge the FCC's action by pursuing all available avenues. According to an annual report recently filed by Comsat with the Securities and Exchange Commission, the alleged $62 million in excess earnings represents more than the company's total net income for all of 1986 ($58.948 million).

Other recent FCC proposals may have a negative impact on Comsat's business activities if finally adopted. In the past, the FCC has regulated the switched message traffic across the North Atlantic by requiring AT&T to evenly distribute its circuits between cables and satellites according to a "balanced loading" scheme. Under a new FCC proposal, a greater use of fiber optics over satellites would be allowed for routing future telecommunications traffic from the U.S. to points overseas. Since Comsat is the sole U.S. representative to Intelsat, any move that replace transatlantic satellite links with fiber optics will ultimately reduce Comsat's revenues in what has always been Intelsat's most lucrative market.

Although a recent FCC Memorandum Opinion and Order endorsed the use of the Inmarsat space segment for the provision of aeronautical services, the ruling also maintained that the Inmarsat Act precludes Comsat from providing aeronautical services on a jurisdictional basis. In response, Comsat has filed legal challenges concerning the aeronautical issue in two Federal courts. One suit contests the recent FCC interpretation, while the other is a motion for the dismissal of a pending suit by aeronautical competitor ARINC against the U.S. State and Commerce Departments and the FCC. The ARINC suit seeks to prevent the government from doing anything to permit Comsat's entry into the aeronautical field.

In explaining its decision to file the legal challenges on the aeronautical issue, Comsat emphasized that it had never sought a monopoly position for the provision of aeronautical services. "ARINC has already announced its intention to put its own aviation satellites in place and to create a for-profit business to provide aeronautical services," said George Tellman, vice president and general manager for Comsat Maritime Services. "We have never opposed them on this, but we do intend, contrary to ARINC's efforts, to ensure that there is a viable and competitive INMARSAT alternative. "

Although Contel believes that it would be in the best interests of Comsat, Contel and their respective shareholders if the agreement were terminated by mutual consent, Comsat officials believe that termination at this time cannot be justified under the terms of its merger agreement with Contel. In an attempt to resolve the issue, meetings between the two corporations were scheduled as this publication went to press.

Corporate Interviewing Via Satellite

Contel ASC (Formerly American Satellite Company) is providing the satellite time and

communications equipment for an innovative program in which college students are being interviewed by satellite for possible employment by General Electric, Boeing, and the Harris Corporation. The Georgia Institute of Technology (Georgia Tech) in Atlanta, is the first university to use satellite technology in this new video interviewing application. Georgia Tech students began being interviewed by satellite early in February by officials at General Electric Corporation in Daytona Beach, Florida and at Harris Corporation in Melbourne, Florida.

The Boeing Company in Seattle, Washington began its interviewing process on March 4. Since then, Boeing has also used the system to interview students from the University of Tennessee at Knoxville (using the Georgia Tech facility) and the University of Florida at Gainesville (using the General Electric facility).

The service is marketed by Video Placement Company in Pembroke, Massachucetts. Purdue University in Lafayette, Indiana is the next college scheduled to begin holding interviews by satellite. Video Placement and Contel ASC will announce additional college, corporate and government participants in the near future.

"We don't see this innovation replacing the initial campus interview," said Dr. James Osborne, Georgia Tech's director of corporate relations and placement. "We do see it reducing the massive expenditures that companies incur in flying large numbers of college students to corporate locations for intermediate interviews following the first interview on campus."

Vincent Cogliano, president of Video Placement, believes companies can both save money and streamline their recruiting procedures through interviews by satellite. For example, one company (not GE, Harris, or Boeing), according to Mr. Cogliano, last year spent an average of $650 to fly each student to its headquarters for intermediate interviews. A total of 450 students were flown in and 17 were hired. "If we can held a company narrow such a group to 250, we can save that company $130,000 and pay for this satellite service many times over," said Mr. Cogliano.

Under a contract with Video Placement, Contel ASC is providing not only time on its own ASC-1 satellite but also transportable 3.5 meter Ku-band antennas and related equipment at Georgia Tech, GE and Harris. Contel ASC will also provide similar arrangements at most of the future sites, including installation, operation and maintenance of the antenna terminals, as the service expands.

Video Placement is responsible for the installation of all video room equipment at each location. The interviewing equipment includes a compact cabinet with a personal-sized screen which gives the interview a more face-to-face quality.

"This is another satellite application that offers the advantages of flexible and easily assembled networks with interactive video and voice at very reasonable costs," said George Roberts, president of Contel ASC. "Our continued success is based upon spotting such markets and working with our customers to develop them and make them profitable."

Reaction to the equipment and the satellite interview process, according to Dr. Osborne, has been largely positive by students and company officials. "Most students are comfortable with the interviews by satellite, and the corporate interviewers are seeing that these meetings can be an efficient and cost-effective method of pre-screening young men and women," said Osborne.

Dr. Osborne added that satellite video technology is "not only useful in recruiting but can serve as a medium for other aspects of corporate-campus relations." Georgia Tech is considering using this same video satellite system to conduct meetings between the university's research staff and corporate research and development personnel. Other major applications, Dr. Osborne predicts, are technology overviews and briefings for key corporate executives and briefings by company officials for faculty and students.

Contel ASC, part of Contel's Information Systems sector, provides communications services to the nation's largest businesses and government agencies. Contel, an Atlanta-based company with more than $3 billion in revenue and sales, provides a broad range of telecommunications and information processing products and services through four sectors: Telephone operations, Business Systems, Federal Systems and Information Systems.

(For further information, contact: Lynette Steele, Contel ASC, 1801 Research Boulevard, Rockville, MD 20850-3186, Tel (301) 251-8333.)

Hi-Net Changes Name
Adds Pay-Per-View Channels

The Comsat Corporation has changed the name of its Hi-Net Communications business to Comsat Video Enterprises to describe more clearly the nature

of its activities. Comsat Corporation recently acquired Holiday Corporation's 50% interest in the Hi-Net Communications Partnership and signed a seven-year contract with Holiday Corporation to provide in-room entertainment services by Ku-band satellite. In addition, new seven-year contracts were announced with LaQuinta Motor Inns Inc. and Drury Inns Inc. With the addition of these new affiliates more than 1500 hotels are under contract for in-room video entertainment services as well as other guest services offered or planned by Comsat Video Enterprises. The services are delivered by satellite to more than 280,000 hotel rooms in major chains, including Days Inn of America Inc., Econolodge of America, Harrah's, Embassy Suites, Hampton Inns, Holiday Inn, Hilton, Sheraton, Ramada Inns, Howard Johnsons, Roadway Inns, Quality Inns, Best Western Hotels, Comfort Inns, and Trust House Forte.

Commenting on the new contracts with LaQuinta Motor Inns and Drury Inns, David Beddow, President of Comsat Video Enterprises, said, "We're growing very fast. We're well positioned to take advantage of the growth in the market because we're the low cost competitor. We've already made the capital investment needed for a system of the 1990's. Any time we install a new hotel or replace an old system, we're putting ourselves well ahead of our competitor's economics."

"This summer we'll increase the number of pay-per-view channels from one to three. That means a significantly increased revenue sharing opportunity for hotels. Increased guest satisfaction with a wider selection of quality movies and special events should drive viewing levels to record highs by year's end."

Comsat Video Enterprises' services extend beyond in-room entertainment. "Any time a hotel management company wants to interconnect its properties for data communications, as they might do for reservations, we're prepared. Our installed equipment package makes the conversion to a full two-way VSat (very small aperture terminal) network easy," Mr. Beddow added. "Also unique to our system is our ability to provide secure video conferencing to any location in the system. Work is now under way to provide other guest services such as in-room video checkout by the end of the year."

(For further information, contact: Robert Hunter, Comsat Video Enterprises (202) 863-6800.)

Eight Organizations Reserve McDonnell Douglas Launch Dates

McDonnell Douglas has received nine down payments to reserve future launch dates for commercial satellites on the Delta II launch vehicle. The nine launch reservations were received from eight organizations. Washington D.C.-based Communications Satellite Corporation (Comsat) made two reservations for its STC 1 & STC 2 DBS spacecraft, and Contel ASC (formerly American Satellite Company) of Rockville, MD made one reservation for a future ASC dual-band satellite. Other companies placing single reservations include Hughes Communications Satellite Services Inc. of Los Angeles California, the Government of India, Inmarsat and Pacific Satellite Inc. Two additional organizations declined to be identified.

Delta II launches for commercial customers will begin in late 1988 or early 1989. The company will have the capacity to launch up to 12 commercial satellite per year in the early 1990s.

In January, the Air Force awarded McDonnell Douglas a contract to build and launch seven Delta IIs, with options for 13 more. At the same time, McDonnell Douglas has been actively marketing the Delta II to commercial customers.

"We are please to see such a strong response from commercial customers for the Delta II," said Jim Dorrenbacher, vice president and general manager of the McDonnell Douglas Astronautics Co. division in Hunntington Beach, California. "Our market projections indicate that there could be up to a total of 30 commercial satellites over a five or six year period that could fly on Delta II."

(For further information, contact: Jeff Fister, McDonnell Douglas (714) 896-1302.)

NATO III-C Satellite Reactivated After 7 1/2 Years in Storage Orbit

Last month, U.S. military officials reactivated a Ford Aerospace-built military communications satellite that had been in space storage for the last 7 1/2 years. Reactivation of NATO III-C is the first instance of a satellite returning to active status following so many years in orbital storage.

Praising the performance of the newly reactivated NATO bird, U.S. Air Force Col. Glenn D. Rogers, deputy director of the Defense Satellite Communications System Program Office said that the 7 1/2 year on-orbit period is the longest in the Space Division's experience. Built by Ford Aerospace for the North Atlantic Treaty Organization (NATO) and launched in November 1978, the NATO-III C was the third in a series of four satellites. NATO officials initially placed the satellite

in orbital storage until it could be used as a replacement for NATO-III B, the second satellite of the series. NATO officials extended the satellite's inactive period, however, because the superior quality and performance of NATO-III B far surpassed performance expectations.

During the satellite reactivation process, Air Force satellite engineers generated command signals at its Satellite Test Facility in Sunnyvale, CA. These control signals were then relayed to the satellite through a ground terminal located in New Hampshire. Officials at both the Supreme Headquarters Allied Powers Europe (SHAPE) Technical Center in the Hague, Netherlands, and the NATO Integrated Communications Systems Central Operating Authority (NICSCOA) subsequently confirmed the satellite's successful reactivation.

According to the book **Communications Satellites** by Larry Van Horn, NATO Phase III satellites are 86 inches in diameter and approximately 119 inches high including the antenna payload. Weighing 849 pounds in orbit, each NATO Phase III satellite carries three-channel X-band repeaters transmitting in the 7~8 GHz frequency range. The orbital locations for the three NATO Phase III satellites are 18°, 22.5°, and 50° west longitude.

The prime contractor for three generations of NATO communications satellites, Ford Aerospace is also responsible for modifying and expanding the NATO Satellite Communications Ground Segment. Both the NATO-III satellites and their associated ground stations provide instantaneous digital communications links for the 14-nation NATO military alliance (Belgium, Canada, Denmark, England, West Germany, Greece, Iceland, Italy, Luxembourg, The Netherlands, Norway, Portugal, Turkey and the United States.) The satellites are compatible and interoperable with the military satellite system of the United States and the United Kingdom.

Satellite Newsflash: Europe, Africa & the Middle East

British Tests of Skyphone to Take Place This Autumn

While the plans of U.S. companies to offer aeronautical communications services remain up in the air, British Telecom International has announced that in-flight trials of the first worldwide satellite telephone service for air travelers will take place this autumn. According to an international agreement announced on March 25 1987, British Telecom International and the telecommunications authorities of Norway and Singapore will work towards providing global coverage for BTI's "phones on planes" service, which will launch on transatlantic routes beginning in 1988. BTI's Skyphone service will allow passengers to make their own telephone calls from planes, paying by credit card only. It will also offer telephone and data message facilities for airline operations. The cost of calls has not yet been finalized.

Passengers will be able to use push button telephones mounted on the walls or on seat-backs. Initially it will not be possible to receive incoming calls.

A special antenna mounted on the aircraft transmits the signals to the INMARSAT satellite, where they are downlinked to the earth station, and then automatically switched to the public telephone network. Mr. Anthony J. Booth, managing director of BTI said: "This new arrangement will build on the existing good working relationship between the three telecommunications service providers, who already co-operate to provide a highly successful worldwide maritime satellite service."

A dedicated earth station at Goonhilly Downs in Cornwall is available for the BTI Skyphone service. Similar new earth station facilities will be provided by Norway and Singapore.

BTI Skyphone is the result of a collaborative agreement between BTI, RACAL-DECCA and British Airways. In-flight tests of the new service are due to take place using a RACAL-DECCA private Jetstream aircraft in October. Passenger trials on British Airways 747 transatlantic aircraft will begin next spring, with a service available to all airlines by December 1988. Commercial discussions are taking place at the moment with a number of airlines.

(For further information, contact: the British Telecom press office (01) 356-5369.)

Overseas Marriott Hotels Establish Satellite Entertainment Services

Reflecting the increased importance of effective in-room entertainment, the five-star Marriott Hotel chain has added satellite television to its wide range of facilities. In a major new agreement it has appointed VISTA (Satellite) Limited of London as exclusive supplier of "In room" entertainment products and services for Europe, the Middle East and Africa. Their early installations include Amsterdam and Paris, plus imminently London and

Vienna.

"The contract covers satellite television and video equipment, licensing of satellite programs and films, and the supply of text computers, television and audio," explained Marriott Director of Rooms Operations, Steve Hicks. "Later planned developments include the provision of intelligent systems, allowing direct "interaction" with guests' rooms."

The two companies are also participating in a new in-room guide "Vista En Suite Entertainment" to present the superb range of in-room services on offer to Marriott guests. Founded by former senior Granada executive Bob Denton, Vista has specialized in commercial satellite TV applications for hotels, hospitals and housing developments.

(For further information contact Bob Denton, Vista, The Swiss Center, 10 Wardour Street, London W1V 3HG Tel (01) 439-3058.)

Satellite Newsflash: The Pacific

Palapa B2P Satellite Successfully Launched

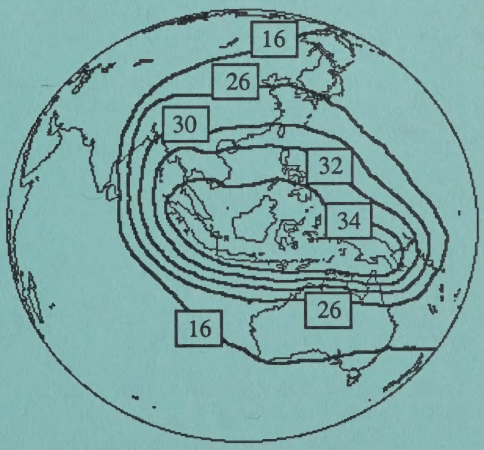
On March 20 1987, Indonesia's Palapa B2P satellite was launched on top of a Delta rocket from the Kennedy Space Center in Cape Canaveral, Florida. Built by the GM Hughes Electronics subsidiary **Hughes Aircraft Company** of El Segundo, California, the Palapa B2P satellite will provide domestic video, voice and high-speed data services to more than 150 million people living within the 3,400-mile-long archipegalo of 13,677 islands which comprise the nation of Indonesia. Palapa B2P will also be used to provide regional telecommunications services for neighboring countries like the Philippines, Thailand, Malaysia, Singapore and Papua New Guinea.

Palapa B2P is a version of the Hughes HS 376 communications satellite built by Hughes Aircraft's Space and Communications Group. Thirty HS 376 satellites have already been purchased by nine customers and currently provide telecommunications to more than 1 billion people at locations around the globe. Palapa B2P is expected to have a mission life of more than eight years.

The Palapa system is operated by PERUMTEL, Indonesia's state-owned telecommunications company. Indonesia inaugurated its satellite system in July 1976 with the launch of the first of two Hughes-built Palapa A satellites. Palapa A1 has since been retired, but Palapa A2 (77° East) and its next-generation follow on, Palapa B1 (108° East), continue to serve the archipegalo. A Palapa B2 satellite was deployed by a NASA space shuttle in February of 1984, but subsequently failed when the perigee kick motor (which normally boosts satellites from a low earth orbit into the geostationary arc) malfunctioned. In November 1984, the crew of a NASA space shuttle recovered the Palapa B2 satellite and returned it to earth. By that time, however, PERUMTEL had already ordered the construction of a replacement--Palapa B2P.

The Palapa B2P deployment represented the last commercial satellite launch by NASA. Although the U.S. government decided to cease providing commercial launch services for both domestic and international satellite owners following the Challenger space shuttle disaster in 1986, the Reagan administration later decided to make an exception following intensive lobbying on the part of President Suharto of Indonesia.

In Indonesia, the word "palapa" connotes Indonesian national unity. Since the launch of the first Palapa A spacecraft in 1976, the Palapa satellites have proven to be an economical and efficient way to hurdle the country's geographical barriers and electronically link the people of Indonesia and other members of the Association of Southeast Asian Nations (ASEAN). The satellites have brought educational television and radio programming to many of the islands for the first time, and in the first severn years of satellite service, domestic telephone use in Indonesia increased by nearly 400% and international use grew by more



Palapa B2P Coverage from 113° East longitude

than 1000%. This year, telephone communications are being revolutionized by the introduction of a state-of-the-art TDMA system that was provided by COMTEL of Santa Maria, California (see the February issue of ***World Satellite Update***).

The master control station in Cibinong, near Jakarta, functions as the center of the system. It tracks and sends commands to the satellites and controls the telephone and TV networks. Ground stations in Bandung and Cilacap also serve important roles in the Palapa satellite network.

At the time of writing, Palapa B2P was in the midst of a six-week testing period which will allow both Hughes and PERUMTEL engineers to evaluate the performance of the satellite. Following the test period, the satellite will become operational from an orbital position of 113° East longitude. Like Palapa B1, Palapa B2P will transmit by means of frequencies within the 3.7 to 4.2 GHz range. The satellite uses 10-watt TWTAs to produce a signal level (EIRP) within Indonesia of at least 34 dBW, while locations within the other ASEAN members and Papua New Guinea will expect to obtain signal levels ranging from 32 to 34 dBW. The capacity of the satellite is 12,000 two-way voice channels or 24 color TV signals.

A conservative estimate of the transponder capacity required up through 1990 is 12 for Indonesia and 9 for the other ASEAN members for a total of 21. Either Palapa B1 or B2P could satisfy these projected requirements with 3 transponders to spare for evolving needs. The Palapa B2P satellite was launched so that PERUMTEL could have a complete backup or redundancy of their space system in orbit. This is particularly needed, since there have been reports of some problems with the Palapa B1 satellite which presently serves as the primary bird in the system.

North American Ku-band Transponder Loading Report

The transponder listings which appear on the following four pages are based on the US Federal Communications Commission transponder report of December 1986, recent reports from the various satellite operators and other reliable sources within the North American satellite industry. This issue provides listings for the Canadian Anik C1, C2 and C3 satellites, and the US-owned ASC 1, Spacenet I, and SBS III birds. In our next issue we will present the loading reports for SBS I, II and IV, Satcom K1 and K2, Morelos F1 and F2, Spacenet II, and GStar A1 and A2. The June issue will also give a statistical breakdown of just how North American's Ku-band satellite capacity is now being used.

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Ku-band Satellite Transponder Loading Report for ITU Region 2: the Americas (Part One of Two Parts)

ANIK C — **Telesat Canada**

Satellite	Location	Tr.#	Beam	BW	Polarity/ Frequency	Service/ Description	Subcarrier Frequency
ANIK C3	117.5°W	03	W.&W Central Can.Spot	27 MHz	V-11.778	**Occasional Video**-News, sports & teleconferencing.	5.41 MHz
ANIK C3	117.5°W	04	W.&W Central Can.Spot	27 MHz	V-11.804	**Occasional Video**-News, sports & teleconferencing.	5.41 MHz
ANIK C3	117.5°W	08	West Canada Spot	27 MHz	V-11.926	**The Knowledge Network**-British Columbia's educational TV program service.	5.41 MHz
ANIK C3	117.5°W	09	W.&W. Central Can. Spot	27 MHz	V-11.961	**Access Alberta**-Educational programming. Auxiliary service: CKUA Radio	5.41 MHz 5.76 & 5.94 MHz
ANIK C3	117.5°W	12	W.&W. Central Can. Spot	27 MHz	V-12.048	**Superchannel/ First Choice**-Movies, sports, and specials.	5.41 MHz
ANIK C3	117.5°W	13	W.&W Central Can.Spot	27 MHz	V-12.083	**Canadian Home Shopping Network**-English language edition.	5.41 MHz
ANIK C3	117.5°W	17	East Canada Spot	27 MHz	H-11.730	**FDMA**-SCPC multiple access telephony	
ANIK C3	117.5°W	18	East Canada Spot	27 MHz	H-11.756	**Atlantic Satellite Network**-CTV network programing.	5.41 MHz
ANIK C3	117.5°W	19	E.&E. Central Can. Spot	27 MHz	H-11.791	**Super Ecran**-Movies, sports, and specials in French. Auxiliary service: Stereo sound	5.41 MHz 5.76 & 5.94 MHz
ANIK C3	117.5°W	20	E.&E. Central Can.Spot	27 MHz	H-11.817	**Occasional Video**-News, sports & teleconferencing.	5.41 MHz
ANIK C3	117.5°W	21	E.&E. Central Can.Spot	27 MHz	H-11.852	**Radio Quebec**-French languago TV program service.	5.41 MHz

Satellite	Location	Tr.#	Beam	BW	Polarity/ Frequency	Service/ Description	Subcarrier Frequency
ANIK C3	117.5°W	23	E.&E. Central Can.Spot	27 MHz	H-11.913	**Tele-des-Jeunes (TVJQ)**-French language children's programming.	5.41 MHz
ANIK C3	117.5°W	23	E.&E. Central	27 MHz	H-11.913	**Musique Plus**--French language music video service.	5.41 MHz
ANIK C3	117.5°W	24	E.&E. Central Can. Spot	27 MHz	H-11.939	**La Sette (TVFQ or TV99)**-French language TV service with programming from France.	5.41 MHz
ANIK C3	117.5°W	25	E.&E. Central Can.Spot	27 MHz	H-11.974	**La Chaine (TV Ontario)**-French language educational program service of TV Ontario.	5.41 MHz
ANIK C3	117.5°W	26	E.&E. Central Can. Spot	27 MHz	H-12.000	**TV Ontario**-Educational programming. Auxiliary service: Wawatata-Indian language radio service.	5.4 MHz 6.52 MHz
ANIK C3	117.5°W	27	E.&E. Central Can.Spot	27 MHz	H-12.035	**Canadian Home Shopping Network**-French language edition.	5.41 MHz
ANIK C3	117.5°W	28	E.&E. Central Can.Spot	27 MHz	H-12.061	**Ontario Legislative Assembly**	5.41 MHz
ANIK C3	117.5°W	30	E.&E. Central Can.Spot	27 MHz	H-12.122	**TV Quatre Saisons**-French language TV service from Montreal.	5.41 MHz
ANIK C3	117.5°W	31	E.&E. Central Can. Spot	27 MHz	H-12.157	**Superchannel/First Choice** (East)-Movies,sports, and specials in English.	5.41 Mhz
ANIK C3	117.5°W	32	E.&E. Central Can. Spot	27 MHz	H-12.183	**Canadian Home Shopping Network**-English language edition.	5.41 MHz
ANIK C2	110.0°W	1	W.&W Central Can.Spot	27 MHz	V-11.717	**FDMA**-SCPC multiple access telephony	
ANIK C2	110.0°W	2	W.&W Central Can.Spot	27 MHz	V-11.743	**FDMA**-SCPC multiple access telephony	
ANIK C2	110.0°W	3	W.&W Central Can.Spot	27 MHz	V-11.778	**Occasional Video**-News, sports & teleconferencing.	5.41 MHz

Satellite	Location	Tr.#	Beam	BW	Polarity/ Frequency	Service/ Description	Subcarrier Frequency
ANIK C2	110.0°W	4	W.&W Central Can.Spot	27 MHz	V-11.804	**Occasional Video**-News, sports & teleconferencing.	5.41 MHz
ANIK C2	110.0°W	13 & 14	West Canada Spot	54 MHz	V-12.096	**TDMA**-93 Mb/s (2XT3) Message traffic Mont to Cal/Edm/Vanc	
ANIK C2	110.0°W	15 & 16	West Canada Spot	54 MHz	V-12.157	**TDMA**-93 Mb/s (2XT3) Message traffic Mont to Cal/Edm/Vanc	
ANIK C2	110.0°W	17	E.&.E. Central Can.Spot	27 MHz	H-11.730	**FDMA**-SCPC Multiple Access Telephony	
ANIK C2	110.0°W	18	E.&.E. Central Can.Spot	27 MHz	H-11.756	**FDMA**-SCPC Multiple Access Telephony	
ANIK C2	110.0°W	19	E.&E. Central Can. Spot	27 MHz	H-11.791	**Occasional Video**-News, sports & teleconferencing.	5.41 MHz
ANIK C2	110.0°W	20	E.&E. Central Can.Spot	27 MHz	H-11.817	**Occasional Video**-News, sports & teleconferencing.	5.41 MHz
ANIK C2	110.0°W	21 & 22	E.&E. Central Can.Spot	54 MHz	V-11.865	**TDMA**-93 Mb/s (2XT3) Message traffic Cal to Mont./Tor.	
ANIK C2	110.0°W	27 & 28	E.&E. Central Can.Spot	54 MHz	V-12.048	**TDMA**-93 Mb/s (2XT3) Message traffic Edm to Mont./Tor.	
ANIK C2	110.0°W	29 & 30	E.&E. Central Can.Spot	54 MHz	V-12.109	**TDMA**-93 Mb/s (2XT3) Message traffic Vanc to Mont./Tor.	
ASC 1							**Contel ASC**
ASC I	128.0°W	19	CONUS	72 MHz	H-11.740	**SCPC**-18 Channels.	
ASC I	128.0°W	20	CONUS	72 MHz	H-11.820	**SCPC**-23 Channels.	
ASC I	128.0°W	21	CONUS	72 MHz	H-11.900	**SCPC**-32 Channels.	
ASC I	128.0°W	22	CONUS	72 MHz	H-11.960	**SCPC**-19 Channels.	
ASC I	128.0°W	23	CONUS	72 MHz	H-12.060	**Occasional Video**-teleconferencing.	6.2 & 6.8 MHz
ASC I	128.0°W	24	CONUS	72 MHz	H-12.140	**SCPC**-28 Channels.	

Satellite	Location	Tr.#	Beam	BW	Polarity/ Frequency	Service/ Description	Subcarrier Frequency
SBS III							**MCI**
SBS III	95.0°W	01	CONUS	43 MHz	H-11.725	**Comsat Video Enterprises-** Teleconferences and general services for the lodging industry. (as of 6/30/87)	
SBS III	95.0°W	02	CONUS	43 MHz	H-11.774	**SCPC-**6 channels.	
SBS III	95.0°W	03	CONUS	43 MHz	H-11.823	**Satellite Cinema (1), WTBS, & Biznet-**Comsat Video Enterprises' services for the lodging industry. (Encrypted: B-MAC)	None
SBS III	95.0°W	04	CONUS	43 MHz	H-11.872	**Occasional Video-**News, sports, or teleconferencing feeds.	6.2 & 6.8 MHz
SBS III	95.0°W	05	CONUS	43 MHz	H-11.921	**Satellite Cinema (2), WTBS, & Biznet-**Comsat Video Enterprises' services for the lodging industry. (Encrypted: B-MAC)	None
SBS III	95.0°W	06†	CONUS	43 MHz	H-11.970	**ESPN & CNN-**Comsat Video Enterprises' services for the lodging industry. (Encrypted: B-MAC).	None
SBS III	95.0°W	07	CONUS	43 MHz	H-12.019	**Occasional Video- (CONUS)** newsfeeds, including WTN DSSA London	5.76 MHz
SBS III	95.0°W	08	CONUS	43 MHz	H-12.068	**Occasional Video (PSN)-** News, sports feeds.	5.76 MHz
SBS III	95.0°W	09†	CONUS	43 MHz	H-12.117	**Showtime & Satellite Cinema (3)**--Comsat Video Enterprises' services for the lodging industry. (Encrypted: B-MAC).	None
SBS III	95.0°W	10	CONUS	43 MHz	H-12.166	**Occasional Video-** American Law Network, news, sports & U.S. Army teleconferencing feeds.	6.2 & 6.8 MHz or 5.41 MHz
Spacenet I							**GTE Spacenet Corp.**
Spacenet I	120.0°W	19	CONUS	72 MHz	H-11.740	**Wideband Digital-**60 MHz	
Spacenet I	120.0°W	20	CONUS	72 MHz	H-11.820	**SCPC-2** Channels.	
Spacenet I	120.0°W	22	CONUS	72 MHz	H-11.960	**Wideband Digital-**60 MHz	
Spacenet I	120.0°W	24	CONUS	72 MHz	H-12.140	**Wideband Digital-**70 MHz.	

† High Powered 40-watt transponders on SBS III